

NOTES ON ZOOLOGY OF THE MACLAY-COAST (1) IN
NEW GUINEA.

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Leaving the description of anatomical investigations of different animals obtained at the Maclay-Coast (in 1871-72 and 1876-77), to form the comparative-anatomical supplement of my work of travels (1870-1882), which will be published in Europe by-and-by, I intend to bring before this Society a few remarks concerning the systematical position of some the animals collected.

I.—ON A NEW SUB-GENUS OF PERAMELIDÆ: BRACHYMELIS.

(Plate XXXVIII.)

In July or August, when the rain-falls are less frequent on the north-east coast of New Guinea than in the other months of the year (2), and when the coarse grass, which covers the valleys and slopes of the hills near the coast becomes nearly dry, the natives of neighbouring villages fix a day for a common sport. On the fixed day they assemble early in the morning, armed with

(1) To the portion of the north coast of New Guinea, between Cape Croisilles and Cape King William, a coast line of about 150 miles, extending inland for an average distance of 30—50 miles to the highest ranges of the Mountains Mana-boro-boro (or Finisterre Mountains), I have given the name of the *Maclay-Coast*, so far back as 1872 (Natuurkundig Tijdschrift voor Nederlandsch Indie, Batavia, 1872,) for greater convenience of reference in scientific description by avoiding the constant repetition of its geographical position.

(2) N. de Maclay. Notice Météorologique concernant la Côte-Maclay en Nouvelle-Guinée, published in the Natuurkundig Tijdschrift voor Nederlandsch Indie. Batavia, 1873.

spears, bows and arrows. Arrived on the spot, a few boys under the direction of an experienced adult, set fire to the grass in many places in a systematic manner, according to the direction of the wind and the formation of the ground. The armed men surround the burning patches and watch for the animals which try to escape the fire. In this way a great number of wild pigs and small marsupials are killed. I used to follow many such expeditions, not only to have my share of the spoil, but principally to extend my knowledge of the fauna.

Amongst the victims of the slaughter the most numerous at the Maclay Coast is a large bandicoot.

The specimen which has served for this description is not by any means the largest I have seen, because the larger ones are always secured by natives at once on account of their size and spoiled by spear or arrow wounds for zoological or anatomical purposes.

Not having had in New Guinea a superabundance of alcohol, I have kept in my collections, only 3 specimens of this animal.

The examination of the dentition (number of the upper incisors) the bristle-like hair and the proportional shortness of the hind limbs (1), induce me to describe this bandicoot as belonging to a new sub-genus (2) of Peramelidæ: *Brachymelis* (3).

I shall show in this paper, that some bandicoots described as species of *Perameles* have to be included in the Sub-genus *Brachymelis*, but before this, I intend to give some details about the species from the Maclay-Coast, which I shall call after the place where I dissected the first specimen of it. (4.)

(1) "Limbs (of the Peramelidæ) unequal, the posterior legs being considerably longer than the anterior." Waterhouse *Mamalia*, Vol. I., p. 354.

(2) I am aware that, on the character of possessing 8 upper incisors instead of 10, a Genus *Echimiopara* has been established by Lesson. I think however, that this peculiarity alone, is not sufficient to make a new Genus; but I believe, that the above mentioned 3 characters authorise the establishment of a *Sub-genus*.

(3) *βραχμηλῖς*—Short limbed.

(4) The hut which formed my first residence in New Guinea in 1871, was built on a small Cape called by the natives "Garagassi."

BRACHYMELIS GARAGASSI. N. sp.

Habitat.—The Maclay-Coast of New Guinea.

Principal Measurements of an adult ♂ and an adult ♀.

From tip of nose to the base of tail	..432 mm.	17in.	301 mm.	11,9in.
Tail	82 —	3,2	63 —	2,5
From the tip of the nose to the occiput	82 —	3,2	71 —	2,8
Fore limb	„ „ „ about 135 —	5,3	105 —	4,2
Hind limb	„ „ „ about 172 —	6,7	145 —	5,7
Hand, from the wrist to the end of the nail 3rd finger	..... 39 —	or 1,5	31 —	or 1,3
From the head to the end of nail of 4th toe	..... 65 —	2,5	55 —	2,2
Length of the ear	..... 22 —	0,9	18 —	0,7

The general contour of the body differs according to the state of nourishment. At the time of the year, when the natives, as already mentioned, burn the grass, the *Brachymelis Garagassi* is very fat, and his short legs appear still shorter in comparison to the heavy body.

Fur.—The yellowish-brown fur of the back consists of short light yellowish-gray under-fur and long flat bristle-like hair, which may prick palpably, if you pass your hand up the reverse way on the back of the animal. The length of the prickly hair varies between 24-16 mm. (O, 9—O, 6 in.) and their breadth between O, 8—O, 5 mm. Both flat sides, the upper as well as the under, are grooved. The groove on the upper side reaches nearly to the end of the hair, but the under side of the hair is grooved not more than half of the length. The base and the lower half of each hair is of light brown colour which gradually darkens towards the upper end, which is dark brown, nearly black. The under side of the hair is in general lighter than the upper. Some of the bristly hairs are darker than others, some on the contrary quite light brown. Inspected from the side, some of the flat hair appears to be divided just on the top in two ends of unequal length and it proves easy to split the flat hair in two bands of different thickness; the thinnest of the two bands corresponds to the layer of the upper side of the flat hair (1). On the underside of the body, from the chin to the

(1) The easy splitting of the hair may also be the result of the remaining of the specimen a long time in alcohol.

arms, the fur is of a yellowish dirty white colour and the hair is not over 9 mm. (O, 4 in.) long. Between this light coloured short hair with nearly circular horizontal sections there are also some light coloured, flat, stiff hairs.

The *head* is elongate and conical, (Fig. 1) *muzzle* and *lips* blackish and naked.

The distance of the eye from the corner of the mouth is equal to the distance from the corner of the mouth to the anterior lower margin of the meatus auditorius, and the distance from the eye to the tip of the nose is equal to three times the above measure. A few long black hairs are to be found on the sides of the upper lips, 3 hairs just behind the corner of the mouth and a few short ones on the throat.

The *eyes* are very small.

The *ear* is elongated, the breadth being $\frac{2}{3}$ of the length. Opposite the meatus is a small, bare, triangular, tragus-like prominence. Parallel to the anterior margin of the auricle, between the margin and the concha runs a longitudinal ridge, while on the opposite posterior border a narrow pouch is to be found. Nearly in the centre of the concha are two very characteristic folds. The lower, which is the longest, stretches horizontally across the whole cavity of the concha, the upper fold projecting forward presents a deep notch. The cavities of both folds open upwards. The adjoining Fig. 1, will facilitate the understanding of the above description. The position of the slight incision of the posterior margin near the upper extremity of the ear, is, as far as I have observed not constant.

The *tail*, is short, stiff and naked. Amongst the great number of *Brachymelis* I had the opportunity to see on the occasion of burning the grass, I noticed many animals with only the stump left, having a part of the tail lost (bitten off?) in some way.

Dentition.—(Fig. 2, 3 and 4.)

$$\text{I. } \frac{4}{3}, \quad \text{C. } \frac{1}{1}, \quad \text{P. } \frac{3}{3}, \quad \text{M. } \frac{4}{4},$$

The absence of the 5th upper incisor is one of the principal characters which distinguishes the *Brachymelis* from the other *Peramelidæ*. The incisors of both jaws stand close together; those of the upper are nearly of the same size and a trifle smaller than in the lower jaw. The third mandibular incisor is the broadest and bicuspid.

The *Canines* are small, the maxillary ones of about the same size as the first premolar, the mandibular ones narrower than those of the upper jaw.

The *premolars* are slightly different one from the other in their shape, increasing in size from the front backward. The mandibular premolars are a little larger than these of the maxilla. In both jaws, the premolars stand not close together but leaving a space between each tooth. In the lower jaw there is also a space between each tooth. In the lower jaw there is a space between the third premolars and the first molar.

The *molars* are all very much worn down, so that the cusps can not be well recognised, with the exception of the last mandibular molar, where the 5 cusps are distinct.

The grinding surface of the molars is not horizontal, but in those of the upper jaw, sloping to the internal margin, while in those of the mandibula, the "grinding-down" appears in the opposite direction, *i.e.*, the internal margin is the highest.

On the palate, 10 distinct ridges are to be distinguished. (Fig. 3.)

The *pouch* of the female *Brachymelis* is very long, with an entrance as usual directed towards the tail. In the ♀ of which I gave the measures, the distance from the anterior margin of the entrance to the bottom of the pouch measured about 50 mm. (2 in.) and 83 mm. (3, 3in.) from the bottom of the posterior fold of the pouch near the anus.

The pouch contained 6 nipples (1) arranged in 2 parallel longitudinal rows. Four of the nipples could be seen through the

(1) Waterhouse (*Mammalia*, Vol. 1, p. 345,) gives the number of mammae of the *Peramelidæ*—8; he mentions, that Prof. Owen found eight nipples in *P. nasuta*, arranged in two slightly curved longitudinal rows, but adds that possibly this number may not be constant. Peters and e Doria (*Enumerazione dei Mammiferi*, etc., p. 354) say that *P. Doreyanus* has a very developed pouch with 8 nipples.

entrance of the pouch, without distending the same. The nipples of this ♀ were of different length, some not longer than 1 mm., 2 about 10 mm. and one, sucked by a young one (1) 18 mm. (over O, 7 in.) long.

Up to the present time 4 species of *Perameles* have been found in New Guinea and described as:—

P. Doreyanus. Quoy and Gaimard.

P. Moresbyensis. Ramsay.

P. Broadbentii. Ramsay.

P. Longicauda. Peters and Doria.

In the zoological part of the voyage of the *Astrolabe* (2), Quoy and Gaimard give the description of *Perameles Doreyanus* and the dental formula of the same, in which only 8 upper incisors are indicated (3). Waterhouse referring to the statement of Quoy and Gaimard, expresses the possibility that the two incisors have been lost "whilst the animal was alive" (4). Peters and Doria, who had the opportunity of examining numbers of *P. Doreyanus*, mention that *P. rufescens* (from Kei Islands) has like *P. Doreyanus*, 8 upper incisors (5).

I find to my regret that neither the Australian nor the Macleay Museum in Sydney possess a specimen of *P. Doreyanus*, so that I have had only the help of the description and illustrations (6) of Quoy and Gaimard to decide the question, whether the *B. Garagassi* is identical with *P. Doreyanus* or not. On the first reflection the number of the upper incisors, the bristle-like hair

(1) Although the mother was dead over 2 or 3 hours, the young one in the pouch, continued to suck holding the nipples with one of the fore-limbs and moving constantly the three other limbs. The young *Brachymelis* in the pouch was about 30 mm. (about 12 in.) long (from the tip of the nose to the base of the tail) and the eyes were still closed. When I tried to draw away the fore-limbs from the nipple the little animal soon grasped the same again. Sometimes catching hold of another nipple, introduced it in the mouth and sucked two nipples at the same time.

(2) *Voyage de decouvertes de l'Astrolabe* (1826-29).

(3) *Mammalia*, Vol. I., p. 102.

(4) "Possibly these teeth have existed in the skull, but have been lost whilst the animal was alive, in which case the sockets would soon become obliterated." Waterhouse. *Mammalia*, Vol. I., p. 386.

(5) W. Peters e G. Doria *Enumerazione dei Mammiferi, etc., etc.*, p. 11.

(6) *Voyage de decouverte de l'Astrolabe*. Atlas, pl. 16.

(1) and the general dimensions of the body (2) of both are in favour of this supposition, but closer examination of the illustration of the dentition of *P. Doreyanus* (3), the 6 nipples in the pouch of *B. Garagassi*, instead of the 8 of *P. Doreyanus*, and other minor differences have induced me to consider *B. Garagassi* as a new species.

The other three above-mentioned species of *Perameles* are all very distinct from *B. Garagassi*; *P. Moresbiensis* (4) on account of the dentition (5 upper incisors and very large canines), (fig. 8), and in comparison with *B. Garagassi* soft fur; *P. Broadbentii* (5) and *P. longicauda* (6) on account of the general habitus and all details.

Examining the collection of *Peramelidæ* in the Australian Museum, I found that *P. Cockerellii* Ramsay, shows a general resemblance to *B. Garagassi*. Mr. Ramsay mentions in his paper (7.) "I can find no trace of the fifth large posterior incisor" (of the upper jaw.) The absence of this upper incisor, as well as the spiny fur on the back are two characters identical with *B. Garagassi*, but the examination of the dentition of *P. Cockerellii*, which was partly possible in the stuffed specimen of the Australian Museum. (Fig. 7.), brought me to the conclusion that *P. Cockerellii* is distinct from *B. Garagassi* (8.)

(1) Loc. Cit., pl. 16, fig. 4.

(2) Zoolog. part of the Voyage de l'Astrolobe, p. 102.

(3) Loc. Cit. Atlas, pl. 16, fig 2.

(4) E. P. Ramsay. The Mammals of the Chevert Expedition, part I., in Proc. Linn. Soc. of N.S.W., Vol. II., 1878, p. 14.

(5) E. P. Ramsay. Description of a new Marsupial allied to the Genus *Perameles*. Proc. Linn. Soc. of N.S.W., Vol. III., 1879, p. 402.

(6) Peters e Doria. Enumerazione dei Mammiferi, etc., etc., p. 12, pl. X.

(7) E. P. Ramsay, Descriptions of a New Species of *Perameles*, from New Ireland. Proceed. Linn. Soc. of N. S. W. Vol. I., 1877, p. 310 and 318. Note on *P. Cockerellii*.

(8) At the Meeting of the Society when this paper was read, and when I had the opportunity of exhibiting a stuffed specimen of *B. Garagassi*, Dr. O. Finsch from Bremen, was present as a guest. Knowing that Dr. Finsch has collected, during his visit in New Britain in 1881, about twenty specimens of *Perameles*, which he obtained in Blanche Bay, it was interesting to me to ask Dr. Finsch, if he thought *B. Garagassii* identical with one of the species from New Britain, and got a decided answer that his specimen belongs to a different species, which he believed to be *P. Doreyanus*. The collections of Dr. Finsch were taken by him to Berlin, but Prof. Peters died before he could express his opinion about the species of the *Perameles* from Blanche Bay.

All the Peramelidæ with 4 upper incisors agree also in some other characters, as the bristle-like hair which is more stiff and prickly than in the other species with 5 other incisors, and as far as I can judge from illustrations and stuffed specimens, in the relative shortness of the hind limbs. I would therefore propose to include the above mentioned 3 species *P. Doreyanus*, *P. rufescens* (1), *P. Coquerellii* in the subgenus *Brachymelis*.

Before the conclusion of this paper I must express my best thanks to Mr. E. P. Ramsay, at having given me an opportunity of examining carefully the Peramelidæ of the Australian Museum, and of making the sketches of the dentition of *P. Moresbyensis* and *P. Cockerellii*.

EXPLANATION OF PLATE XXXVIII.

- Fig. 1.—Outline of the lateral view of the Head of *Brachymelis Garagassi* *McL.* ♀, a short time (1½ or 2 hours) after death to show the relative position, shape, and size of the ears, eyes, etc., etc. (Nat. size.)
- Fig. 2.—Lateral view of the teeth of both jaws. (*Twice* the nat. size.)
- Fig. 3.—Teeth of the upper jaw and the ten ridges of the palate. (*Twice* the nat. size.)
- Fig. 4.—Teeth of the lower jaw. (*Twice* the nat. size.)
- Fig. 5.—Under surface of the hand of a large *Brachymelis Garagassi* ♂. (Nat. size.)
- Fig. 6.—Under surface of the corresponding foot of the same. (Nat. size.)
- Fig. 7.—End of the snout, in profile, of *Brachymelis Cockerelli* *Rms.*, to show a part of the dentition of the same. (Nat. size.)
- Fig. 8.—End of the snout in profile of *Perameles Moresbyensis* *Rms.* (Nat. size.)

(1) *Peters e Doria.* Emerazione dei Mammiferi etc., etc., p. 11.